AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Original) An x-ray generating device for scanning an object under inspection comprising:

at least one addressable field emission cathode, the cathode comprising a substrate and a nanostructure-containing material comprising carbon nanotubes; and

at least one anode target.

2. (Original) The device of claim 1, wherein the nanostructure-containing material comprises single-walled carbon nanotubes, multi wall nanotubes, or mixtures thereof.

3. (Original) The device of claim 1, wherein the cathode comprises a substrate material is at least partially covered with the nanostructure-containing material coating layer

4. (Original) The device of claim 1, further comprising an adhesion-promoting interlayer between the substrate and the nanostructure-containing material coating layer.

5. (Original) The device of claim 1, further comprising a gate electrode.

6. (Original) The device of claim 1, comprising a plurality of anode targets.

7. (Original) The device of claim 1, wherein the device is portable.

8. (Original) The device of claim 1, wherein the cathode comprises an array of nanostructure-containing material elements, each of the nanostructure-containing elements being individually addressable.

9. (Original) The device of claim 1 wherein the at least one cathode and the at least one anode are contained within a vacuum chamber.

10. (Original) The device of claim 1, further comprising a moveable stage.

11. (Original) The device of claim 1, wherein the cathode emits electrons without the assistance of the heater.

12. (New) A multi-beam x-ray generating device comprising:

a stationary field-emission cathode comprising a plurality of stationary and individually controllable electron-emitting pixels disposed in a predetermined pattern on the cathode;

an anode opposing the cathode comprising a plurality of focal spots disposed in a predetermined pattern that corresponds to the predetermined pattern of the pixels; and

a vacuum chamber enveloping the anode and cathode.

13. (New) The device of claim 12, wherein the cathode comprises a nanostructure-containing material.

14. (New) The device of claim 13, wherein the nanostructure-containing material comprises single walled carbon nanotubes.

15. (New) The device of claim 12, wherein the cathode has a planar geometry.

16. (New) The device of claim 15, wherein the anode has a planar geometry.

17. (New) The device of claim 12, further comprising at least one gate electrode arranged to control the field-emission cathode.

18. (New) The device of claim 17, wherein the at least one gate electrode comprises a plurality of individually addressable gate electrode control units, each unit arranged to control a corresponding electron-emitting pixel.

19. (New) The device of claim 12, wherein the focal spots comprise materials that produce x-rays with different energy distributions when bombarded with electrons emitted from the pixels.

20. (New) The device of claim 12, comprising one focal spot for every pixel.

21. (New) The device of claim 12, further comprising a computer programmed to control the plurality of pixels.

22. (New) The device of claim 21, wherein the computer is programmed to turn on the pixels in sequence, at a predetermined frequency, for a predetermined duty cycle, and/or for a predetermined dwell time.

23. (New) The device of claim 12, wherein the pixels and corresponding focal spots are arranged along the circumference of a circle.

24. (New) The device of claim 12, wherein the plurality of pixels comprise at least one pixel having a first emission area and at least one pixel having a second emission area, wherein the first emission area is larger than the second emission area.

25. (New) The device of claim 12, wherein the pixels and corresponding focal spots are arranged along the circumferences of a plurality of concentric circles.

26. (New) The device of claim 12, wherein the pixels are arranged in at least one cluster, the at least one cluster comprising a plurality of immediately adjacent pixels.

27. (New) The device of claim 12, wherein each pixel comprises a multi-layer electrical gate or coil constructed to focus a beam of electrons emitted from each pixel.

28. (New) The device of claim 12, further comprising a collimator constructed to focus the x-ray beams generated by the focal spots.

29. (New) The device of claim 12, further comprising an x-ray detector.

30. (New) The device of claim 29, wherein the detector comprises a plurality of discrete detector elements.

31. (New) The device of claim 29, wherein the detector comprises a matrix of detector pixels.

32. (New) The device of claim 29, further comprising computer hardware and software for collecting input from the detector, and constructing an image from the input.

33. (New) The device of claim 32, further comprising a monitor for displaying the image.

34. (New) An x-ray generating device comprising:

a stationary field-emission cathode, the cathode comprising a planar surface with an electron-emissive material disposed on at least a portion thereof;

a gate electrode disposed in parallel spaced relationship relative to the planar surface of the cathode, the gate electrode comprising a plurality of openings having different sizes;

an anode opposing the cathode and spaced therefrom, the anode comprising a plurality of focal spots aligned with the electron-emissive material; and

a vacuum chamber enveloping the anode and cathode;

wherein the gate electrode is operable such that the openings can be manipulated to bring at least one beam of electrons emitted from the cathode into and out of registry with at least one of the focal spots.

35. (New) The device of claim 34, wherein the openings comprise a plurality of mesh grids.

36. (New) The device of claim 34, wherein the gate electrode is rotatable.

37. (New) The device of claim 35, wherein the mesh grids are formed from tungsten, molybdenum, nickel, or alloys thereof.

38. (New) The device of claim 35, wherein each of the mesh grids can be electrically and independently controlled.

39. (New) The device of claim 34, further comprising a controlling unit for controlling the operation of the gate electrode.

40. (New) The device of claim 36, further comprising a computer programmed to control the speed at which the gate electrode is rotated, a voltage applied to the gate electrode, a sequence of focal spots brought into registry with electrons emitted from the cathode, and/or the amount of time that the emitted electrons are allowed to remain in registry with a particular focal spot.

41. (New) The device of claim 34, wherein the cathode comprises a nanostructure-containing material.

42. (New) The device of claim 34, wherein the nanostructure-containing material comprises single walled carbon nanotubes.

43. (New) A method of scanning an object with x-rays directed at the object from different locations, the method comprising:

(i) providing a stationary field-emission cathode comprising a plurality of stationary and individually controllable electron-emitting pixels and disposing the pixels in a predetermined pattern on the cathode;

(ii) locating an anode in opposing relationship to the cathode and providing the anode with a plurality of focal spots disposed in a predetermined pattern that corresponds to the predetermined pattern of the pixels;

(iii) enveloping the anode and cathode with a vacuum chamber; and

(iv) activating at least one of the pixels thereby generating a beam of emitted electrons that is incident upon a corresponding focal spot of the anode, thereby generating an x-ray, and directing the x-ray toward the object to be scanned.

44. (New) The method of claim 43, wherein step (iv) comprises activating a first pixel thereby generating a first x-ray incident upon the object to be scanned from a first location, then sequentially activating at least a second pixel thereby generating a second x-ray incident upon the object to be scanned from a second location.

45. (New) The method of claim 43, wherein step (iv) comprises simultaneously activating a plurality of pixels thereby generating a plurality of x-rays incident upon the object to be scanned from multiple locations.

46. (New) The method of claim 43, further comprising the step of:

(v) locating an x-ray detector such that x-rays passing through the object being scanned are incident up the detector.

47. (New) The method of claim 46, wherein the detector comprises a plurality of discrete detectors.

48. (New) The method of claim 46, wherein the detector comprises an array of detector pixels.

49. (New) The method of claim 46, further comprising the step of:

(vi) collecting input from the detector and constructing an image from the input.

50. (New) The method of claim 49, further comprising the step of:

(vii) displaying the constructed image.

51. (New) The method of claim 43, wherein the cathode comprises a nanostructure-containing material.

52. (New) The method of claim 51, wherein the nanostructure-containing material comprises single walled carbon nanotubes.

53. (New) The method of claim 43, wherein steps (i) and (ii) comprise arranging the pixels and corresponding focal spots along the circumference of a circle.

54. (New) The method of claim 43, wherein step (i) comprises providing at least one pixel having a first emission area and providing at least one pixel having a

second emission area, wherein the first emission area is larger than the second emission area.

55. (New) The method of claim 43, wherein steps (i) and (ii) comprise arranging the pixels along the circumferences of a plurality of concentric circles.

56. (New) The method of claim 43, wherein step (i) comprises arranging the pixels in at least one cluster, the at least one cluster comprising a plurality of immediately adjacent pixels.

57. (New) A method of scanning an object with x-rays directed at the object from different locations, the method comprising:

(i) providing a stationary field-emission cathode comprising a planar surface, and providing an electron emissive material on at least a portion of the planar surface;

(ii) disposing a gate electrode in parallel spaced relationship relative to the planar surface of the cathode, and providing the gate electrode with a plurality of openings having different sizes;

(iii) locating an anode in opposing relationship to the cathode and providing the anode with a plurality of focal spots aligned with the electron-emissive material;

(iv) enveloping the anode and the cathode in a vacuum chamber; and

(v) manipulating the gate electrode to bring at least one beam of electrons emitted from the cathode into and out of registry with at least one of the focal spots.

58. (New) The method of claim 57, wherein the openings in the gate electrode comprise a plurality of mesh grids.

59. (New) The method of claim 57, wherein step (v) comprises rotating the gate electrode to bring the at least one beam of emitted electrons into and out of registry with the at least one focal spot.

60. (New) The method of claim 58, wherein the mesh grids are formed from tungsten, molybdenum, nickel, or alloys thereof.

61. (New) The method of claim 57, wherein step (ii) further comprises independently opening and closing the openings of the gate electrode.

62. (New) The method of claim 57, further comprising the step of:

(vi) controlling the operation of the gate electrode with a computer.

63. (New) The method of claim 62, wherein step (v) comprises rotating the gate electrode, and step (vi) comprises controlling the speed of rotation of the gate electrode, controlling a voltage applied to the gate electrode, controlling the sequence of focal spots brought into registry with electrons emitted from the cathode, and/or controlling the amount of time that the emitted electrons are allowed to remain in registry with a particular focal spot.

64. (New) The method of claim 57, wherein the cathode comprises a nanostructure-containing material.

65. (New) The method of claim 64, wherein the nanostructure-containing material comprises single walled carbon nanotubes.